

REMARKS

No amendments have been made. Claims 1, 2, 4 – 10, and 13 – 20 are pending in this Application. Reconsideration and further examination is respectfully requested.

Claim Rejections - 35 U.S.C. §103

1. Claims 1, 3, 7, 10 – 13 & 16 – 18 were rejected under 35 USC 103(a) as being unpatentable over Bruckman (U.S. Patent Publication #20040179518), in view of Sandstrom (U.S. Patent Publication # 6697373). (Note claims 3 and 11 – 12 were previously canceled.) This rejection is respectfully traversed.

As explained in the Applicants' previous response, the Applicants' invention uses two metrics – one, a utilization metric representing a measure of current usage of maximum allowed bandwidth for a service; and the other, a current utilization metric representing a measure of current usage of allocated bandwidth for that service. Additional bandwidth is allocated to a service in response to the current utilization metric unless the link is at full capacity; otherwise bandwidth is balanced between the services such that the utilization metrics are made approximately equal. Note that the utilization metrics are based on maximum allowed bandwidth for a service – which is not necessarily equal for each service.

In order to establish a *prima facie* case of obviousness, one of the several criteria that must be met is that the prior art reference (or references when combined) must teach or suggest all the claim limitations. The Applicants respectfully assert Sandstrom and Bruckman, taken either alone or in combination, fail to teach or suggest the Applicant's claimed invention. In particular, Sandstrom and Bruckman fail to teach or suggest the Applicant's claimed utilization metric.

The Office Action refers to Sandstrom in support of the claimed “utilization metric” as follows: “computing for each service a utilization metric representing a measure of current usage of a maximum allowed bandwidth for that service (paragraph 0006, lines 4-7 (computes the traffic flow)), such that the utilization metrics of the services are made approximately equal to each other (paragraph 0006, lines 8 – 15 (fair sharing)).

There are no paragraph numbers in Sandstrom; the Applicants’ representative assumes the Office Action is referring to Column 6. The Applicants disagree with the characterization of Sandstrom as set forth in the Office Action.

At Col. 6 lines 1 – 7 of Sandstrom, it is explained that an MCC in a PT in Sandstrom computes volumes of traffic flows. At Col. 6 lines 8 – 11, it is explained that ring transport capacity is allocated based on these traffic flow calculations and on fair sharing of network resources. There is no mention here of “maximum allowed bandwidth for a service”. Nor does “fair sharing of network resources” indicate that a particular utilization metric related to the services is being made equal. It merely means that the transport links are being shared.

Referring further to Column 8 of Sandstrom, the use of the traffic flow calculation is explained in more detail. Starting at lines 55 - 60, it is explained that initially, each packet source sending to a given sink is assigned  $1/Q$  of the drop capacity on which to send MinTUs. Reading on – if there is leftover bandwidth, traffic calculations are consulted and the bandwidth is divided between those sources whose traffic flow calculations resulted in a bandwidth request of more than  $1/Q$ . Thus the traffic flow calculation is used when transport link bandwidth is under full capacity.

But, if there is not enough bandwidth – i.e. – if the transport link is currently at full capacity, as explained at Column 9 lines 29 and on, MinTUs are dropped. Sandstrom states that “individual Paths are disfavored based on the PT from which they originate” (Col. 9 line 41 – 42). Also, “The transport capacity sharing could be started from the most over-booked PT-to-PT

hop. (Col. 9 lines 48 – 49). Note the MinTUs are dropped based on the PT from which they originate, not based on any traffic flow metric.

The Applicants claimed invention, in contrast, employs the claimed utilization metric when the link is at full capacity. Accordingly, additional bandwidth is allocated to a service in response to the current utilization metric unless the link is at full capacity. Otherwise bandwidth is balanced between the services such that the utilization metrics are made approximately equal. Note that the utilization metrics are based on maximum allowed bandwidth for a service – which is not necessarily equal for each service. And, the claimed utilization metric is a metric separate from the claimed current utilization metric. The utilization metric is associated with the service, and is used by the claimed method to ascertain how to allocate bandwidth during full capacity.

There simply is no such utilization metric described in Sandstrom. Sandstrom is able only to measure current traffic volume for a given traffic flow, and use that information to assign bandwidth below full capacity. When overcapacity is reached in Sandstrom, no different metrics associated with the flows are considered. In particular, overcapacity is not dealt with in Sandstrom based upon comparison of utilization metrics of maximum allowed bandwidth for services; rather, traffic is dropped based on the PT from which it originated. Bruckman of course offers nothing further when combined with Sandstrom that would teach or suggest the provision of such a utilization metric – Bruckman teaches only the use of LCAS. It is therefore clear that Sandstrom and Bruckman, taken together or in part, fail to teach or suggest the Applicant's claimed invention. The Applicants therefore respectfully request that the rejection of Claim 1 be withdrawn. Independent Claims 10 and 16 contain limitations similar to those of Claim 1 and are believed allowable for the same reasons. The Applicants therefore respectfully request that Claim 1, its dependent claim 7, Claim 10, its dependent claim 13, and Claim 16 and its dependent Claims 17-18 be placed in condition for allowance.

2. Claims 2, 4, 9, 15 & 20 were rejected under 35 U.S.C. 103(a) as being unpatentable over Bruckman in view of Sandstrom and further in view of Branstad (US 6,498,782). This rejection is respectfully traversed.

Claims 2 and 4 are dependent on Claim 1. Claim 15 is dependent on Claim 10. Claim 20 is dependent on Claim 16. As previously set forth, Bruckman and Sandstrom fail to teach or suggest all the elements set forth in independent Claims 1, 10, and 16. Branstad adds nothing further that would solve the deficiencies of Bruckman and Sandstrom. The Applicant therefore respectfully requests that claims 2, 4, 9, 15, and 20 be placed in condition for allowance.

3. Claims 6 and 8 were rejected under 35 U.S.C. 103(a) as being unpatentable over Bruckman in view of Sandstrom and further in view of Aimoto et al. (US 6,144,636). This rejection is respectfully traversed.

Claims 6 and 8 are dependent on Claim 1. As previously set forth, Bruckman and Sandstrom fail to teach or suggest all the elements set forth in independent Claim 1. Aimoto adds nothing further that would solve the deficiencies of Bruckman and Sandstrom. The Applicant therefore respectfully requests that claims 6 and 8 be placed in condition for allowance.

4. Claim 19 was rejected under 35 U.S.C. 103(a) as being unpatentable over Bruckman in view of Sandstrom and further in view of Montgomery, JR (US Pub. #2004005745). This rejection is respectfully traversed.

Claim 19 is dependent on Claim 16. As previously set forth, Bruckman and Sandstrom fail to teach or suggest all the elements set forth in independent Claim 16. Montgomery, JR adds nothing further that would solve the deficiencies of Bruckman and Sandstrom. The Applicant therefore respectfully requests that claim 19 be placed in condition for allowance.

5. Claims 5 and 14 were rejected under 35 U.S.C. 103(a) as being unpatentable over Bruckman in view of Sandstrom, and in view of Branstad and further in view of Aimoto. This rejection is respectfully traversed.

Claim 5 is dependent on Claim 1. Claim 14 is dependent on Claim 10. As previously set forth, Bruckman and Sandstrom fail to teach or suggest all the elements set forth in independent Claims 1 and 10. Branstad and Aimoto add nothing further that would solve the deficiencies of Bruckman and Sandstrom. The Applicant therefore respectfully requests that claims 5 and 14 be placed in condition for allowance.

#### CONCLUSION

In view of the amendments and remarks made herein, Applicant(s) submit(s) that the application is in condition for allowance and request early favorable action by the Examiner.

If the Examiner believes that a telephone conversation with the Applicants' representative would expedite allowance of this application, the Examiner is cordially invited to call the undersigned at (508) 303-2003, or at the undersigned's mobile, (617) 901-6786.

The Director is hereby authorized to charge any fees which may be required to Deposit Account No. 50-2295.

Respectfully submitted,

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